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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/827,530

04/20/2004

Torbjorn Sandstrom

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2964

7590 01/30/2007
HARNESS, DICKEY & PIERCE, P.L.C.
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EXAMINER

WHITMORE, STACY

ART UNIT

PAPER NUMBER

2825

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/30/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/827,530	SANDSTROM ET AL.	
	Examiner	Art Unit	
	Stacy A. Whitmore	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
- 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
- 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's arguments, see amendment remarks, filed October 16, 2006, with respect to the rejection(s) of claim(s) 1-9 under 35 USC 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Borodovsky (US Patent 6,021,0090), and Chilese (US Patent 6,424,879).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3-5, and 7-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Borodovsky (US Patent 6,021,0090).

3. As for the claims, Borodovsky discloses the invention as claimed, including a method and apparatus to compensate for process variations when printing a pattern on a work piece, said method comprising:

(A measuring device for) Determining (or predicting) a two-dimensional CD (critical dimension) distribution (profile) associated with said pattern printed on said work piece [col. 2, lines 55-67; col. 5, lines 3-5, 23-36; col. 6, lines 1-3, 29-39; col. 7, lines 13-51];
Generating a two-dimensional (dose) compensation file to equalize variations in said two-dimensional cd profile [col. 2, lines 55-67; col. 5, lines 3-5, 23-36; col. 6, lines 1-3, 29-39; col. 7, lines 13-51 – the two-dimensional (2D) profile is used to control the lithography tool to adjust or compensate or make more uniform the CD variations on the work piece. The 2D profile is inherently stored (or used as a grouping of data or a file) to utilize it's data in order to compensate or make necessary adjustments to correct for CD variations]; and

(a writing device for) Patterning a work piece using said two-dimensional (dose) compensation file [col. 7, lines 36-41];

Measuring the two-dimensional profile [col. 2, line 55 – col. 3, line 13 show that the CD data is obtained by doing a physical optical process];

Pattern data [col. 7, lines 13-51];

Dose compensation data [col. 2, lines 55-67; col. 5, lines 3-5, 23-36; col. 6, lines 1-3, 29-39; col. 7, lines 13-51];

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borodovsky (US Patent 6,021,0090) in view of Chilese (US Patent 6,424,879).

5. As for the claims, Borodovsky discloses the invention substantially as claimed, including the method and apparatus for compensating for process variations when printing a pattern on a work piece (see as cited above in the rejections of claims 1, 3-5, and 7-10).

Borodovsky does not specifically disclose
Predicting the two-dimensional CD distribution (profile); and
Correction map.

Chilese discloses Predicting the profile [col. 1, lines 45-50, 65-67; col. 2, lines 1-30; col. 5, lines 1-17, 53-67; col. 6, lines 5-20; col. 7, lines 64-67; col. 8, lines 14-44 - the distortion maps are predictive]; and Correction maps [col. 1, lines 45-50, 65-67; col. 2, lines 1-30; col. 5, lines 1-17, 53-67; col. 6, lines 5-20; col. 7, lines 64-67; col. 8, lines 14-44 - the distortion maps are predictive].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Borodovsky and Chilese because both predicting the 2D distribution (profile) and utilizing a correction map would have allowed Borodovsky's system to provide predictive descriptions (maps) of the surface of the substrate and patterns printed on the surface, therefore enabling Borodovsky to utilize computer implemented techniques in order to speed or improve the correction process [see Chilese, col. 7, line 64 – col. 8, line 44].

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stacy A. Whitmore whose telephone number is (571)

272-1685. The examiner can normally be reached on Monday-Thursday, alternate Friday 6:30am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on (571) 272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


THANH X. LUU
PRIMARY EXAMINER

for Stacy A Whitmore
Primary Examiner
Art Unit 2825

SAW

January 21, 2007